

- (12) International Application Published in Accordance with Treaty on International Cooperation in the Area of Patents (PCT)
- (19) World Organization for Intellectual Property International Office
- (43) International Publication Date: May 21, 2004

## (11) International Publication No.: WO 2004/042770 A2

## PCT

(51) Int. Patent Classification7: H01J 37/00

(21) Int. File No.: PCT/EP2003/012283

(22) Int. Application Date: November 4, 2003

(25) Language of Submission: German

(26) Language of Publication: German

- (30) Priority Data: 102-52,129.8 November 4, 2002 DE
- (71) Applicant (for all designated nations except the US): OMICRON NANO TECHNOLOGY GMBH [DE/DE]; Limburger Str. 75, 65232 Taunusstein (DE). FOCUS GMBH GERÄTE ZUR ELEKTRONENSPEKTROSKOPIE UND OBERFLÄCHENANALYTIK [DE/DE]; Am Birkhecker Berg 20, 65510 Hünstetten-Görsroth (DE).
- (72) Inventor: and
- (75) Inventor/Applicant (for the US only): FUNNEMANN, Dietmar [DE/DE]; Mörikesstrasse 2, 65232 Taunusstein

- (DE). ESCHER, Matthias [DE/DE]; Bad-Sulza-Ring 35, 65520 Bad Camberg (DE)..
- (74) Attorneys: FUCHS Jürgen, H., et al.; Söhnleinstrasse 8, 65201 Wiesbaden (DE).
- (81) Signatory states (national): AE, AG, AL, AM, AT, AU, AZ, BA. BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Signatory states (regional): patent ARIPO, (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), patent Eurasia (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM). patent Europe (AT, BE, BG, CH, CY, CZ, DE, DK,EE, ES, FL, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), patent OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

## (54) Title: IMAGE-GENERATING ENERGY FILTER FOR ELECTRICALLY CHARGED PARTICLES AND THE USE THEREOF

(57) Abstract: The invention relates to an image-generating energy filter for filtering electrically charged particles. The inventive energy filter comprises at least two toroidal energy analyzers (30, 40) arranged in a row. A transfer lens device (20) is located between the exit plane (5) of the first energy analyzer (30) and the entrance plane of the second energy analyzer (40), thereby making it possible to obtain aberration-free, energy-filtered images of the surface (1') of a sample on a detector (10).

Explanation according to Rule 4.17:

- Inventor statement (Rule 4.17, No. iv) for the US only.

## Published:

- without international search report; will be republished after the report has been received.

To interpret the two-letter code and the other abbreviations, the reader is referred to the "Guidance Notes on Codes and Abbreviations") at the beginning of each regular edition of the PCT Gazette.